Lecture 3
More Basic HTML/CSS
Reading: 2.2; 3.1 - 3.2; 3.4

Except where otherwise noted, the contents of this presentation are Copyright 2009 Marty Stepp and Jessica Miller.

### 2.2: More HTML Elements

- 2.1: Basic HTML
- **2.2: More HTML Elements**
- 2.3: Web Standards
Web page metadata: `<meta>` (2.3.3)

```
<meta http-equiv="Content-Type"
content="text/html; charset=iso-8859-1" />
<meta name="description"
content="Authors' web site for Building Java Programs." />
<meta name="keywords" content="java, textbook" />
```

- placed in the head of your XHTML page
- meta tags often have both the name and content attributes
  - some meta tags use the http-equiv attribute instead of name
- using a meta tag for Content-Type gets rid of validator "tentatively valid" warnings

Definition list: `<dl>`, `<dt>`, `<dd>`

dl represents a list of definitions of terms (block)
dt represents each term, and dd its definition

```
<dl>
  <dt>newbie</dt>  <dd>one who does not have mad skills</dd>
  <dt>own</dt>  <dd>to soundly defeat
  (e.g. I owned that newbie!)</dd>
  <dt>frag</dt>  <dd>a kill in a shooting game</dd>
</dl>
```

newbie
  one who does not have mad skills
own
  to soundly defeat (e.g. I owned that newbie!)
frag
  a kill in a shooting game
a lengthy quotation (block)

As Lincoln said in his famous Gettysburg Address:

Fourscore and seven years ago, our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Inline quotations: <q>

a short quotation (inline)

Quoth the Raven, “Nevermore.”

Why not just write the following?

Quoth the Raven, "Nevermore."

We don't use " marks for two reasons:

1. XHTML shouldn't contain literal quotation mark characters; they should be written as &quot;
2. using <q> allows us to apply CSS styles to quotations (seen later)
HTML Character Entities (2.2.4)

*a way of representing any Unicode character within a web page*

<table>
<thead>
<tr>
<th>character(s)</th>
<th>entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; &gt;</td>
<td>&lt; &gt;</td>
</tr>
<tr>
<td>é è ñ</td>
<td>é è ñ</td>
</tr>
<tr>
<td>™ ©</td>
<td>™ ©</td>
</tr>
<tr>
<td>π δ ∆</td>
<td>π δ Δ</td>
</tr>
<tr>
<td>И</td>
<td>И</td>
</tr>
<tr>
<td>&quot; &amp;</td>
<td>&quot; &amp;</td>
</tr>
</tbody>
</table>

- Complete list of HTML entities
- How would you display the text &amp; on a web page?

**HTML-encoding text**

```html
&lt;p&gt;
    &lt;a href=&quot;http://google.com/search?q=marty&amp;ie=utf-8&amp;aq=t&quot;&gt;Search Google for Marty&lt;/a&gt;
&lt;/p&gt;
```

- To display the link text in a web page, its special characters must be encoded as shown above
**Computer code: <code>**

*code: a short section of computer code (usually rendered in a fixed-width font)*

```html
<p>
The <code>ul</code> and <code>ol</code> tags make lists.
</p>
```

The *ul* and *ol* tags make lists.

**Preformatted text: <pre>**

*a large section of pre-formatted text (block)*

```html
<pre>
Steve Jobs speaks loudly
reality distortion
Apple fans bow down
</pre>
```

Steve Jobs speaks loudly
reality distortion
Apple fans bow down

- displayed with exactly the whitespace / line breaks given in the text
- shown in a fixed-width font by default
- how would it look if we had instead enclosed it in *code* tags?
3.1: Basic CSS

- 3.1: Basic CSS
- 3.2: More CSS

### Grouping styles

```css
p, h1, h2 {
  color: green;
}
h2 {
  background-color: yellow;
}
```

This paragraph uses the above style.

**This h2 uses the above styles.**

- a style can select multiple elements separated by commas
- the individual elements can also have their own styles (like h2 above)
CSS comments: /* ... * / (3.1.4)

/* This is a comment. It can span many lines in the CSS file. */

p {
  color: red;
  background-color: aqua;
}

- CSS (like HTML) is usually not commented as rigorously as programming languages such as Java
- the // single-line comment style is NOT supported in CSS
- the <!-- ... --> HTML comment style is also NOT supported in CSS

CSS properties for fonts (3.1.5)

<table>
<thead>
<tr>
<th>property</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>font-family</td>
<td>which font will be used</td>
</tr>
<tr>
<td>font-size</td>
<td>how large the letters will be drawn</td>
</tr>
<tr>
<td>font-style</td>
<td>used to enable/disable italic style</td>
</tr>
<tr>
<td>font-weight</td>
<td>used to enable/disable bold style</td>
</tr>
</tbody>
</table>

Complete list of font properties
font-family

```css
p {
  font-family: Georgia;
}

h2 {
  font-family: "Courier New";
}
```

This paragraph uses the first style above.

This h2 uses the second style above.

- enclose multi-word font names in quotes

More about font-family

```css
p {
  font-family: Garamond, "Times New Roman", serif;
}
```

This paragraph uses the above style.

- can specify multiple fonts from highest to lowest priority
- generic font names:
  serif, sans-serif, cursive, fantasy, monospace
- if the first font is not found on the user's computer, the next is tried
- generally should specify similar fonts
- placing a generic font name at the end of your font-family value ensures that every computer will use a valid font
**font-size**

```css
p {
  font-size: 14pt;
}
```

This paragraph uses the style above.

- units: pixels (px) vs. point (pt) vs. m-size (em)
  - 16px, 16pt, 1.16em
- vague font sizes: xx-small, x-small, small, medium, large, x-large, xx-large, smaller, larger
- percentage font sizes, e.g.: 90%, 120%

- pt specifies number of point, where a point is 1/72 of an inch onscreen
- px specifies a number of pixels on the screen
- em specifies number of m-widths, where 1 em is equal to the font's current size

---

**font-weight, font-style**

```css
p {
  font-weight: bold;
  font-style: italic;
}
```

This paragraph uses the style above.

- either of the above can be set to normal to turn them off (e.g. headings)
## CSS properties for text (3.1.6)

<table>
<thead>
<tr>
<th>property</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>text-align</td>
<td>alignment of text within its element</td>
</tr>
<tr>
<td>text-decoration</td>
<td>decorations such as underlining</td>
</tr>
<tr>
<td>line-height, word-spacing, letter-spacing</td>
<td>gaps between the various portions of the text</td>
</tr>
<tr>
<td>text-indent</td>
<td>indents the first letter of each paragraph</td>
</tr>
</tbody>
</table>

Complete list of text properties

### text-align

blockquote { text-align: justify; }

h2 { text-align: center; }

The Emperor's Quote

[TO LUKE SKYWALKER] The alliance... will die. As will your friends. Good, I can feel your anger. I am unarmed. Take your weapon. Strike me down with all of your hatred and your journey towards the dark side will be complete.

- text-align can be left, right, center, or justify (which widens all full lines of the element so that they occupy its entire width)
text-decoration

```css
p {
    text-decoration: underline;
}
```

This paragraph uses the style above.

- can also be overline, line-through, blink, or none
- effects can be combined:

```css
text-decoration: overline underline;
```

The `list-style-type` property (3.2.4)

```css
ol { list-style-type: lower-roman; }
```

- Possible values:
  - i. none: No marker
  - ii. disc (default), circle, square
  - iii. decimal: 1, 2, 3, etc.
  - iv. decimal-leading-zero: 01, 02, 03, etc.
  - v. lower-roman: i, ii, iii, iv, v, etc.
  - vi. upper-roman: I, II, III, IV, V, etc.
  - vii. lower-alpha: a, b, c, d, e, etc.
  - viii. upper-alpha: A, B, C, D, E, etc.
  - ix. lower-greek: alpha, beta, gamma, etc.
  - x. others: hebrew, armenian, georgian, cjk-ideographic, hiragana, katakana, hiragana-iroha, katakana-iroha
3.2: More CSS

- 3.1: Basic CSS
- 3.2: More CSS

Body styles

```css
body {
  font-size: 16px;
}
```

- to apply a style to the entire body of your page, write a selector for the `body` element
- saves you from manually applying a style to each element
**Cascading style sheets**

- it's called Cascading Style Sheets because the properties of an element *cascade* together in this order:
  - browser's default styles
  - external style sheet files (in a `<link>` tag)
  - internal style sheets (inside a `<style>` tag in the page's header)
  - inline style (the `style` attribute of the HTML element)

---

**Inheriting styles (explanation) (3.2.1)**

```css
body { font-family: sans-serif; background-color: yellow; }
p { color: red; background-color: aqua; }
a { text-decoration: overline underline; }
h2 { font-weight: bold; text-align: center; }
```

This is a heading.

A styled paragraph. Previous slides are available on the web site.

- a bulleted list

- when multiple styles apply to an element, they are **inherited**
- a more tightly matching rule can override a more general inherited rule
- not all properties are inherited (notice link's color above)
Styles that conflict

\[\text{p, h1, h2 \{ color: blue; font-style: italic; \}}\]
\[\text{h2 \{ color: red; background-color: yellow; \}}\]

This paragraph uses the first style above.

This heading uses both styles above.

- when two styles set conflicting values for the same property, the latter style takes precedence
- (later we will learn about more specific styles that can override more general styles)

W3C CSS Validator (3.2.6)

- jigsaw.w3.org/css-validator/
- checks your CSS to make sure it meets the official CSS specifications
- more picky than the web browser, which may render malformed CSS correctly
CSS properties for backgrounds

<table>
<thead>
<tr>
<th>property</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>background-color</td>
<td>color to fill background</td>
</tr>
<tr>
<td>background-image</td>
<td>image to place in background</td>
</tr>
<tr>
<td>background-position</td>
<td>placement of bg image within element</td>
</tr>
<tr>
<td>background-repeat</td>
<td>whether/how bg image should be repeated</td>
</tr>
<tr>
<td>background-attachment</td>
<td>whether bg image scrolls with page</td>
</tr>
<tr>
<td>background</td>
<td>shorthand to set all background properties</td>
</tr>
</tbody>
</table>

background-image

```css
body {
    background-image: url("images/draft.jpg");
}
```

This is the first paragraph
This is the second paragraph.
It occupies 2 lines.

- background image/color fills the element's content area
background-repeat

body {
  background-image: url("images/draft.jpg");
  background-repeat: repeat-x;
}

This is the first paragraph
This is the second paragraph...
It occupies 2 lines

• can be repeat (default), repeat-x, repeat-y, or no-repeat

background-position

body {
  background-image: url("images/draft.jpg");
  background-repeat: no-repeat;
  background-position: 370px 20px;
}

This is the first paragraph
This is the second paragraph...
It occupies 2 lines

• value consists of two tokens, each of which can be top, left, right, bottom, center, a percentage, or a length value in px, pt, etc.
• value can be negative to shift left/up by a given amount
Favorites icon ("favicon")

- the `<link>` tag, placed in the HTML page's `<head>` section, can specify an icon for a web page
  - this icon will be placed in the browser title bar and bookmark/favorite
- IE6: this doesn't work; must place a file in `.ico` format named `favicon.ico` in the root directory of the web server (instructions)